best course to pursue. Personally, I have ceased to operate on cancer of the cervix where the disease has advanced to the point when the diagnosis is easily made. I believe that then radium offers a better palliative measure than does surgery or Percy's cautery. One cannot be too careful in the prognosis given these unfortunates. I am satisfied that the people as well as physicians are realizing that the hope of absolute cure in these cases lies in early diagnosis. It is a terrible condition of affairs for a patient to present herself with the entire lower segment of the uterus destroyed by cancer and to learn that this patient has been under treatment for months for ulcer of the womb. The saddest thing in this whole picture is the fact that these patients could have been saved but for the mistake in the diagnosis.

When any physician is in doubt as to the malignancy of a badly lacerated and eroded cervix he should have no hesitancy in calling for surgical and pathological consultation. It is just as important in borderline cervix conditions to have a competent pathologist at hand as it is in breast cases when breast neoplasms are about to be removed. Surgeons are extremely fortunate because, unlike the physician dealing with cancer of the stomach, we can, with the greatest of ease, secure a specimen of suspected tissue and immediately ascertain whether or not the trouble is suitable for plastic repair or a complete hysterectomy to be followed by high voltage x-ray therapy. The successful treatment of cancer, in my opinion, is not any one individual agent but a combination of early diagnosis, surgery, radium, x-ray and Percy's cautery, which, unquestionably, has a place in treatment in all forms of carcinoma. I believe that the internal use of colloidal gold is going to add considerably to our armamentarium in the treatment of cancer. The experience of Ochsner has proven it a benefit in the post-operative handling of these cases.

AUGUST JEROME LARTIGAU, M. D. (391 Sutter Street, San Francisco)—When all is said regarding the present treatment of cancer generally, the outstanding facts of experience remain that our present methods are on the whole inadequate and unsatisfactory. The keynote to more successful results lies, as has been repeatedly emphasized by Dr. Sherrick and many others, in the recognition of the disease in its earlier manifestations; and with this in mind the education of the laity and even the physician must be pushed to the point where only wilful self-neglect can prevent timely and proper treatment and a higher percentage of cures.

While there is an agreement as to the fundamental importance of this aspect of the problem, the merits and limitations of radio-therapy and operative treatment have unfortunately not yet been clearly determined. Many are now advocating the radium treatment of earlier operable cases of cervical carcinoma by radiation alone and the figures they advance in support of their claims cannot be disregarded, but, notwithstanding the brilliant achievements along these lines, it seems to me that for the present at least, radical operation followed by radiation or not, still appears to be the line of action which is most likely to yield the surest and best results. In advanced inoperable cases on the other hand, as well as in many of the borderline ones, radiation remains our most effective remedy, the palliative effects being nothing short of wonderful in many instances.

The question as to whether or not preoperative radiation should be routinely practiced is still a mooted one. Further experience will be necessary before any conclusions can be drawn regarding this point. In my own experience I have not observed any of the drawbacks mentioned by other writers; nevertheless, it is well to keep them in mind.

DOCTOR SHERRICK (closing)—There is just one point that I want to emphasize more strongly, i.e., the effect of x-ray and radium on the blood. As shown by Von Kiehm, even in castration doses there is a decided decrease of both white and red cells with a definite and significant drop in hemoglobin while the blood platelets increase. The blood picture is extremely slow to return to normal and convalescence is much slower. These factors we cannot ignore in dealing with massive doses of x-ray therapy and in our enthusiasm for radium in uterine carcinoma that is not far advanced and in prophylactic preoperative or in post-operative treatment.

ABOUT INFECTIOUS JAUNDICE IN UTAH

By JOSEPH H. PECK, M. D., *Tooele, Utah*

Tooele and Lincoln, towns of a common water supply, seem to suffer most severely, while Grantsville and Stockton, which each have a separate supply, are practically free from the disease.

The disease affects preferably children three to twelve years of age, no difference in the sexes. I have never seen it in a nursing baby and only three adult cases in five years.

I know of no treatment of any benefit except an earnest endeavor to keep up the water intake and watch for signs of an acidosis which may occur in the persistent cases.

DISCUSSION *by George A. Cochran, Salt Lake City; W. W. Boardman, San Francisco; Donald J. Frick, Los Angeles; T. B. Beatty, Salt Lake City.*

PROBABLY the most complete review of the infectious jaundice situation in our recent literature is a paper by Blumer, read at the San Francisco session of the American Medical Association, 1923. In this he tabulates the epidemics over the United States from the initial one, which occurred in Virginia in 1812, to and including 1922. The most striking thing about the incidence of the outbreaks is the great increase in number and distribution since the late war.

In his report he lists only one break in Utah, that at Kaysville, in 1915. I feel that this subject has been neglected in our state and that perhaps if it were drawn to our attention that it might be a means of getting more complete reports of the incidence in Utah and that a better means of control might be determined.

First as to the name: This condition is not the infectious jaundice of our textbooks. Most writers ignore it entirely and those who have done work on it are unanimous in stating that it is in no way related to Weil's disease. With exception of jaundice they have nothing in common.

Incidence: In the five years I have been living in Tooele, I have seen outbreaks, both in spring and fall, of each year, and Drs. Phipps and Davis tell me that they have had it to deal with for twenty-five years, at least in occasional outbreaks.

Tooele and Lincoln, towns of a common water supply, seem to suffer most severely, while Grantsville and Stockton, which each have a separate supply, are practically free from the disease. In 1923 almost every child in the Lincoln school, about twenty in number, was affected in a period of six weeks, and I will give below a detailed report of cases occurring in my own practice in Tooele during October and November of this year.

For those not familiar with Blumer's paper, I will give a brief description of the condition as we see it in Tooele County. A child shows loss of appetite, sometimes for a week before the onset of the severe illness, and if closely watched it will be noticed that its stools, though solid, are getting light in color and very foul. I have never seen fever at this stage. After this prodromal period vomiting commences and is usually very severe, many patients being unable to retain even water for twenty-four hours or so. This is accompanied by a fever of various degrees, some running as high as 105. After twenty-four to forty-eight hours of this the child

begins to show jaundice, some in conjunctiva only, more often, however, the discoloration is intense, the whole body being markedly yellow. This lasts rarely more than forty-eight hours when the child rapidly clears up and appetite and bowel movements return to normal, though the jaundice may last a week and the child refuse any food for an even longer period. On the other hand, light stools may give only clue to nature of condition.

The urine contains bile, never, however, showing albumin as in Weil's disease. Liver usually palpable and tender. The leucocytes are only moderately increased, 12-15000 being the maximum. No relapses or conjunctival hemorrhages as in Weil's disease, though a child may have a second attack. Itching is not as marked as in jaundice from other conditions. Bacteriologically, nothing has been discovered which sheds any light on the mode or cause of the infection.

I have fed urine soaked carrots to a pig and injected him intreperitoneally with blood from a severe case without upsetting his well-being in any way whatever. Weil's disease always being fatal to a pig and the causative spirillum found with ease in his blood.

Occurrence: The disease affects preferably children three to twelve years of age, no difference in the sexes. I have never seen it in a nursing baby and only three adult cases in five years. These in adults, however, occurred when no epidemics among the children were on hand, so probably could be classed as catarrhal jaundice, which is considered by Blumer as likely sporadic cases of the above condition.

Treatment: I know of no treatment of any benefit except an earnest endeavor to keep up the water intake and watch for signs of an acidosis which may occur in the persistent cases. I have not found it necessary to use glucose solution to combat it, but believe such a condition might arise in a debilitated baby.

Upon return of appetite children seem to relish zweibach and other starches and for several days are unable to handle the usual amount of milk without pain after ingestion.

The following tabulation of cases answers the question of its infectivity:

1. On September 28, Beth Porter, eight years old, took sick with vomiting, chalk stools followed by jaundice of four days' duration.

2. October 9, Marjory Orme, five years old, her playmate and neighbor, followed with same story.

3. October 11, Vivian Stephens, four years old, playmate of first two and cousin of Orme child, took sick.

4. October 13, June Staples, four years old, cousin of Orme child, who lived two blocks away and visited infected neighbors two or three times a week, took sick with same story.

5. October 20, Nathan Porter, three years old, cousin and occasional playmate of Beth Porter, living one-half mile away, had same course with exception of a diarrhea. No effort had been made to keep above children from playing with first case until jaundice was marked.

6. November 4, Willard Stephens, nine years old, brother to case three, came down with same course.

7. November 13, Ned Stephens, three years old, took sick. No vomiting and only conjunctiva involved. Brother to case three.

8. November 15, Blanche Stephens, six years old, sister to case three, same course plus convulsions at onset.

By this time the mothers in the neighborhood agreed with me that the disease was contagious and kept their children at home, so our last new case was two weeks ago.

Several other cases occurred during this time, but could not be traced to this particular neighborhood. Three cases in the McBride family in Lincoln and one Shields baby were sick in October and several cases were reported to me by neighborhood gossip. These not occurring in my own families were not followed up.

Prognosis seems always good with no sequela, though deaths in women during pregnancy and very young children have been reported. The child, however, is most miserable for two weeks and I believe more school time is lost in our district from this than from tonsillitis or any other common condition.

In conclusion let me say portions of rural Utah, Tooele County at least, are suffering from an endemic disease causing vomiting and jaundice of ten days or two weeks' duration, markedly infectious to children of two to twelve years of age, for which no cause is known and no method of transmission is as yet discovered.

Tooele, Utah.

DISCUSSION

GEORGE A. COCHRAN, M. D. (Deseret Bank Building, Salt Lake City)—The cases of infectious jaundice observed during the past six months have numbered four. The infectious nature of the disorder has not been conclusive.

The ages range from twelve to eighteen years. The history of the cases are similar. The patient complains of malaise and fever with a dull, heavy ache in the epigastrium. The jaundice is progressive and becomes very intense. The temperature ranges between 100 and 102. Itching is slight. Food increases the discomfort. The urine is dark brown. Leucocytosis ranges between 12-14,000.

It requires three to four weeks for the disorder to run its course. I have not seen two cases in the same family but Dr. Peck's cases seem to establish that it is a disorder disseminated by contact.

W. W. BOARDMAN, M. D. (Union Square Building, San Francisco)—Doctor Peck's report calls attention to the confusion at present existing in connection with the various types of jaundice associated with gastro-intestinal disturbances and fever. A brief review of the literature will show a multiplicity of terms and confusion in their use.

It is generally recognized that epidemics of jaundice do occur, some of which are dependent upon infection by the spirocheta ictero-hemorrhagica. It is less generally recognized that in other epidemics, the spirocheta is not the etiological factor. In the majority of these latter epidemics, the active agent has not been discovered, although in some an organism of the typhoid-para-typhoid group has been found. Differentiation of these two groups of epidemic jaundice, on clinical grounds alone, is difficult or impossible and the only positive method must rest upon the demonstration or failure to demonstrate the spirocheta ictero-hemorrhagica. This fact explains some of the confusion in the literature, as several epidemics have been reported as due to the spirocheta ictero-hemorrhagica when there is no proof that such was the

case. It is therefore important to keep in mind that epidemic jaundice does occur in the absence of the spirocheta ictero-hemorrhagica, as pointed out by Peck and others.

Another source of confusion in this field is the commonly held conception of so-called catarrhal jaundice, as the result of obstruction of the ampulla of Vater. Jones, Minot and others have demonstrated the impossibility of differentiating catarrhal jaundice from epidemic jaundice of unknown etiology on either clinical or pathological grounds and it would therefore seem desirable to dispense with the term "catarrhal jaundice," substituting sporadic infectious jaundice in its stead. With this conception of catarrhal jaundice, the entire subject becomes clearer.

Following Jones and Minot, I should like to suggest the classification of all these types of jaundice as infectious, occurring either sporadically or in epidemics. The sporadic cases are the cases of so-called catarrhal jaundice, the etiology of which is as yet uncertain. The epidemic cases occur in two groups, the one due to the spirocheta ictero-hemorrhagica—the other due to, as yet, unknown agents.

Few cases of epidemic jaundice have been reported from the Pacific Coast—one by Tickell from Grass Valley in 1922, was accepted as dependent upon the spirocheta ictero-hemorrhagica, but without proof.

It seems probable that with a better understanding of this subject, more frequent epidemics will be recognized and it is to be hoped that with our improved methods of studying biliary tract infections, definite knowledge regarding the etiology of these conditions will be obtained.

DONALD JACKSON FRICK, M. D. (1136 West Sixth Street, Los Angeles)—Light cast on the field of infectious jaundice reveals a jumbled array from which Weil's Disease, through the work of Inado and Ido in 1915, has extricated itself. What remains, with its motley of terminology, is awaiting a careful untangling. The clinical differentiation of cases of infectious jaundice, with an effort to rule out Weil's Disease, is not as simple as one might gather from Doctor Peck's paper. Still with the definite results which are obtainable through guinea pig inoculation, Weil's Disease can be ruled out in any given case. Early in the disease the blood should be utilized for such tests, while after the ninth day the urine will contain the organisms in larger numbers than the blood.

Certainly Weil's syndrome should be included under any general heading of an acute infectious jaundice.

That a better understanding of this condition has differentiated it from the general class gives promise that gradually the causative agents will be sufficiently understood to make possible a complete classification under the heading, "Infectious Jaundice."

Doctor Peck has, in this study, ruled out spirocheta ictero-hemorrhagica as the etiological factor. His cases, fall, therefore, into the general class of unknown etiology.

Jones and Minot have made many investigations in this field, placing the sporadic case (formerly classified as catarrhal jaundice) definitely under the general classification.

Although it seems futile to haggle over classification when there is so little known of etiology, still there is nothing to be gained by retaining so archaic and meaningless a term as catarrhal jaundice.

Epidemics of infectious jaundice are of not uncommon occurrence, particularly in war times. It has been considered that in some of these large series of cases bacillus coli or members of the typhoid group have been the causative organisms.

The clinical similarity of these outbreaks is marked. The sporadic cases, though as a rule less stormy, present much the same general picture.

In a case of such persistently repeated outbreaks as Peck experiences in his section of Utah, one feels that a study of duodenal contents of these patients along bacterological lines might yield fruitful returns.

Doctor Peck has here brought out interesting proofs in the seasonal incidence and geographical distribution of the epidemics in his section. In these, together with his observations of contact cases, he has laid a foundation for further valuable investigation.

In the widely diversified life of the average busy practitioner there is so little time for other than purely clinical investigation that one must congratulate Doctor Peck on his careful study.

T. B. BEATTY (State Board of Health, Salt Lake City)—I wish to congratulate Doctor Peck on his careful study and timely paper on a subject which deserves more attention than it has received in this country, doubtless owing to the mild type of the disease, which is attended with an almost negligible mortality, and the further fact that the extent of its prevalence has not been recognized.

Dr. Peck's record of many cases extending over a long period in his locality undoubtedly could be duplicated in many places. Neither health authorities nor others interested in the study of the disease have had knowledge of the actual conditions as no provision has been made for systematic reports. It is my opinion that this situation should be remedied either through notification required by law as in the other communicable diseases, or voluntary reports by physicians to boards of health.

While the literature shows a curious diversity of opinion on nearly every phase of the subject, certain facts are obvious: the disease is severe enough to cause much interference with school attendance, suffering and other inconveniences, and it is communicable. These facts justify serious efforts on the part of the medical profession to clarify the existing state of confusion of ideas as to etiology, mode of transmission, prophylaxis, etc.

The only outbreak heretofore reported to the State Board of Health in Utah was that referred to in Kaysville which was reported by Dr. Sumner Gleason in 1915. About forty cases occurred and contacts were traced in nearly all of them similar to those reported by Dr. Peck.

The fallacy of the theory advanced by some writers that the disease always originates in and is spread through rats was definitely disproved in that outbreak as there were no rats in Kaysville.

I wish to assure the members of the society that the State Board of Health will render all the assistance in its power through its Laboratory and Bureau of Epidemiolgy in assisting them in their study of the disease and measures of prevention. I also hope that hereafter the board will be notified in all cases diagnosed as infectious jaundice.

Lesions of the Extremities Associated With Diabetes Mellitus—A series of fifty-two cases of diabetes mellitus with associated lesions of the extremities has been observed by Frederick A. Coller and Phil L. Marsh, Ann Arbor, Mich. (Journal A. M. A.). The cases were unselected and represent 8 per cent. of all cases of diabetes mellitus seen during this time. As an outstanding fact, all the patients in the entire group had mild diabetes of long standing. In no case had there been adequate treatment, and glycosuria had been uncontrolled throughout the course of the disease. In fact, the very mildness of the disease was responsible for its neglect by both patient and physician. It was only with the advent of visible complications that the patients came for treatment. All these patients presented lesions in the lower extremity, and none had significant lesions in the upper extremity. Of these patients, eight, all women, had ulcers that had not responded to local treatment. All of them had definite varicose veins, which were thought to be responsible for the ulcers. It is of interest to note that the knee-jerks were present in all but two of the patients. Under dietetic treatment, the ulcers healed promptly with a continuation of the same type of local treatment that had failed previous to the institution of the diet. In twenty-four cases, infection was the initial event. The portal of entry was through some break in the skin, as an abrasion from a shoe, the trimming of a corn, a crack in a callus, all trauma of a minor nature in an unwashed foot. From here the infection spread slowly or rapidly. There were twenty cases of gangrene; five of these cases were complicated by infection. The authors direct attention to the fact, however, that not all lesions of the extremities associated with diabetes mellitus are gangrene. The use of insulin aids treatment of the types with infections by preventing coma and abolishing glycosuria. The prognosis is still grave in the group in which there are both impaired circulation and infection.